

1/40

SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> Anti-PCI neutralizing antibodies

<130> C1-A0226P

<150> JP 2003-011529

<151> 2003-01-20

<160> 60

<170> PatentIn version 3.1

<210> 1

<211> 17

<212> DNA

<213> Artificial

<220>

<223> Artificially synthesized sequence

<400> 1

acgaattcca ccatgcagct cttctc

17

<210> 2

<211> 18

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ctggatcctc aggggcggtt cactttgc

18

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<400> 3
 ttggatccgg ggttcacttt gccaaag 16

<210> 4
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<220>
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<220>
 <221> CDS
 <222> (11)..(1228)

<400> 4
 gaattccacc atg cag ctc ttc ctc ctc ttg tgc ctg gtg ctt ctc agc 49
 Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser
 1 5 10

cct cag ggg gcc tcc ctt cac cgc cac cac ccc cgg gag atg aag aag 97
 Pro Gln Gly Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys
 15 20 25

aga gtc gag gac ctc cat gta ggt gcc acg gtg gcc ccc agc agc aga 145
 Arg Val Glu Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg
 30 35 40 45

agg gac ttt acc ttc gac ctc tac agg gtc ttg gct tcc gct gcc ccc 193
Arg Asp Phe Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro
50 55 60

agc cag aat atc ttc ttc tcc cct gtg agc atc tcc atg agc ctg gcc 241
Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala
65 70 75

atg ctc tcc ctg ggg gct ggg tcc agc aca aag atg cag atc ctg gag 289
Met Leu Ser Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu
80 85 90

ggc ctg ggc ctc aac ctc cag aaa agc tca gag gag gag ctg cac aga 337
Gly Leu Gly Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg
95 100 105

ggc ttt cag cag ctc ctt cag gaa ctc aac cag ccc aga gat ggc ttc 385
Gly Phe Gln Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe
110 115 120 125

cag ctg agc ctc ggc aat gcc ctt ttc acc gac ctg gtg gta gac ctg 433
Gln Leu Ser Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu
130 135 140

cag gac acc ttc gta agt gcc atg aag acg ctg tac ctg gca gac act 481
Gln Asp Thr Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr
145 150 155

ttc ccc acc aac ttt agg gac tct gca ggg gcc atg aag cag atc aat 529
Phe Pro Thr Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn
160 165 170

gat tat gtg gca aag caa acg aag ggc aag att gtg gac ttg ctt aag 577
Asp Tyr Val Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys
175 180 185

aac ctc gat agc aat gcg gtc gtg atc atg gtg aat tac atc ttc ttt	625
Asn Leu Asp Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe	
190 195 200 205	
aaa gct aag tgg gag aca agc ttc aac cac aaa ggc acc caa gag caa	673
Lys Ala Lys Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln	
210 215 220	
gac ttc tac gtg acc tcg gag act gtg gtg cgg gta ccc atg atg agc	721
Asp Phe Tyr Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser	
225 230 235	
cgc gag gat cag tat cac tac ctc ctg gac cgg aac ctc tcc tgc agg	769
Arg Glu Asp Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg	
240 245 250	
gtg gtg ggg gtc ccc tac caa ggc aat gcc acg gct ttg ttc att ctc	817
Val Val Gly Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu	
255 260 265	
ccc agt gag gga aag atg cag cag gtg gag aat gga ctg agt gag aaa	865
Pro Ser Glu Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys	
270 275 280 285	
acg ctg agg aag tgg ctt aag atg ttc aaa aag agg cag ctc gag ctt	913
Thr Leu Arg Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu	
290 295 300	
tac ctt ccc aaa ttc tcc att gag ggc tcc tat cag ctg gag aaa gtc	961
Tyr Leu Pro Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val	
305 310 315	
ctc ccc agt ctg ggg atc agt aac gtc ttc acc tcc cat gct gat ctg	1009
Leu Pro Ser Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu	
320 325 330	

tcc ggc atc agc aac cac tca aat atc cag gtg tct gag atg gtg cac 1057
 Ser Gly Ile Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His
 335 340 345

aaa gct gtg gtg gag gtg gac gag tcg gga acc aga gca gcg gca gcc 1105
 Lys Ala Val Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Ala
 350 355 360 365

acg ggg aca ata ttc act ttc agg tcg gcc cgc ctg aac tct cag agg 1153
 Thr Gly Thr Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg
 370 375 380

cta gtg ttc aac agg ccc ttt ctg atg ttc att gtg gat aac aac atc 1201
 Leu Val Phe Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile
 385 390 395

ctc ttc ctt ggc aaa gtg aac cgc ccc tgaggatcc 1237
 Leu Phe Leu Gly Lys Val Asn Arg Pro
 400 405

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 <211> 406
 <212> PRT
 <213> Artificial

<220>
 <223> Human PCI

<220>
 <221> sig_peptide
 <222> (1).. (19)

<400> 5
 Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser Pro Gln Gly

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Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys Arg Val Glu			
20	25	30	
Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg Arg Asp Phe			
35	40	45	
Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro Ser Gln Asn			
50	55	60	
Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala Met Leu Ser			
65	70	75	80
Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu Gly Leu Gly			
85	90	95	
Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg Gly Phe Gln			
100	105	110	
Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe Gln Leu Ser			
115	120	125	
Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu Gln Asp Thr			
130	135	140	
Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr Phe Pro Thr			
145	150	155	160
Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn Asp Tyr Val			
165	170	175	
Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys Asn Leu Asp			
180	185	190	
Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe Lys Ala Lys			

195	200	205
Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln Asp Phe Tyr		
210	215	220
Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser Arg Glu Asp		
225	230	235 240
Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg Val Val Gly		
245	250	255
Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu Pro Ser Glu		
260	265	270
Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys Thr Leu Arg		
275	280	285
Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu Tyr Leu Pro		
290	295	300
Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val Leu Pro Ser		
305	310	315 320
Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu Ser Gly Ile		
325	330	335
Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His Lys Ala Val		
340	345	350
Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Ala Thr Gly Thr		
355	360	365
Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg Leu Val Phe		
370	375	380
Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile Leu Phe Leu		

385

390

395

400

Gly Lys Val Asn Arg Pro
405

<210> 6

<211> 1261

<212> DNA

<213> Artificial

<220>

<223> Artificially synthesized DNA encoding human PCI with Flag-tag

<220>

<221> CDS

<222> (11)..(1258)

<400> 6

gaattccacc atg cag ctc ttc ctc ctc ttg tgc ctg gtg ctt ctc agc 49

Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser

1

5

10

cct cag ggg gcc tcc ctt cac cgc cac cac ccc cgg gag atg aag aag 97

Pro Gln Gly Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys

15

20

25

aga gtc gag gac ctc cat gta ggt gcc acg gtg gcc ccc agc agc aga 145

Arg Val Glu Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg

30

35

40

45

agg gac ttt acc ttc gac ctc tac agg gtc ttg gct tcc gct gcc ccc 193

Arg Asp Phe Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro

50

55

60

agc cag aat atc ttc ttc tcc cct gtg agc atc tcc atg agc ctg gcc 241

Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala	
65 70 75	
atg ctc tcc ctg ggg gct ggg tcc agc aca aag atg cag atc ctg gag	289
Met Leu Ser Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu	
80 85 90	
ggc ctg ggc ctc aac ctc cag aaa agc tca gag gag gag ctg cac aga	337
Gly Leu Gly Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg	
95 100 105	
ggc ttt cag cag ctc ctt cag gaa ctc aac cag ccc aga gat ggc ttc	385
Gly Phe Gln Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe	
110 115 120 125	
cag ctg agc ctc ggc aat gcc ctt ttc acc gac ctg gtg gta gac ctg	433
Gln Leu Ser Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu	
130 135 140	
cag gac acc ttc gta agt gcc atg aag acg ctg tac ctg gca gac act	481
Gln Asp Thr Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr	
145 150 155	
ttc ccc acc aac ttt agg gac tct gca ggg gcc atg aag cag atc aat	529
Phe Pro Thr Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn	
160 165 170	
gat tat gtg gca aag caa acg aag ggc aag att gtg gac ttg ctt aag	577
Asp Tyr Val Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys	
175 180 185	
aac ctc gat agc aat gcg gtc gtg atc atg gtg aat tac atc ttc ttt	625
Asn Leu Asp Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe	
190 195 200 205	
aaa gct aag tgg gag aca agc ttc aac cac aaa ggc acc caa gag caa	673

Lys Ala Lys Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln	
210	215 220
gac ttc tac gtg acc tcg gag act gtg gtg cgg gta ccc atg atg agc	721
Asp Phe Tyr Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser	
225	230 235
cgc gag gat cag tat cac tac ctc ctg gac cgg aac ctc tcc tgc agg	769
Arg Glu Asp Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg	
240	245 250
gtg gtg ggg gtc ccc tac caa ggc aat gcc acg gct ttg ttc att ctc	817
Val Val Gly Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu	
255	260 265
ccc agt gag gga aag atg cag cag gtg gag aat gga ctg agt gag aaa	865
Pro Ser Glu Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys	
270	275 280 285
acg ctg agg aag tgg ctt aag atg ttc aaa aag agg cag ctc gag ctt	913
Thr Leu Arg Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu	
290	295 300
tac ctt ccc aaa ttc tcc att gag ggc tcc tat cag ctg gag aaa gtc	961
Tyr Leu Pro Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val	
305	310 315
ctc ccc agt ctg ggg atc agt aac gtc ttc acc tcc cat gct gat ctg	1009
Leu Pro Ser Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu	
320	325 330
tcc ggc atc agc aac cac tca aat atc cag gtg tct gag atg gtg cac	1057
Ser Gly Ile Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His	
335	340 345
aaa gct gtg gtg gag gtg gac gag tcg gga acc aga gca gcg gca gcc	1105

Lys Ala Val Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Ala
 350 355 360 365

acg ggg aca ata ttc act ttc agg tcg gcc cgc ctg aac tct cag agg 1153
 Thr Gly Thr Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg
 370 375 380

cta gtg ttc aac agg ccc ttt ctg atg ttc att gtg gat aac aac atc 1201
 Leu Val Phe Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile
 385 390 395

ctc ttc ctt ggc aaa gtg aac cgc ccc gga tcc gac tac aag gac gac 1249
 Leu Phe Leu Gly Lys Val Asn Arg Pro Gly Ser Asp Tyr Lys Asp Asp
 400 405 410

gat gac aag tga 1261
 Asp Asp Lys
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<210> 7
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<220>
 <223> Human PCI with Flag-tag

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 <222> (1)..(19)

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Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys Arg Val Glu
 20 25 30

Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg Arg Asp Phe
 35 40 45

Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro Ser Gln Asn
 50 55 60

Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala Met Leu Ser
 65 70 75 80

Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu Gly Leu Gly
 85 90 95

Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg Gly Phe Gln
 100 105 110

Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe Gln Leu Ser
 115 120 125

Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu Gln Asp Thr
 130 135 140

Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr Phe Pro Thr
 145 150 155 160

Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn Asp Tyr Val
 165 170 175

Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys Asn Leu Asp
 180 185 190

Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe Lys Ala Lys
 195 200 205

Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln Asp Phe Tyr
 210 215 220

Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser Arg Glu Asp
 225 230 235 240

Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg Val Val Gly
 245 250 255

Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu Pro Ser Glu
 260 265 270

Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys Thr Leu Arg
 275 280 285

Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu Tyr Leu Pro
 290 295 300

Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val Leu Pro Ser
 305 310 315 320

Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu Ser Gly Ile
 325 330 335

Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His Lys Ala Val
 340 345 350

Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Thr Gly Thr
 355 360 365

Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg Leu Val Phe
 370 375 380

Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile Leu Phe Leu
 385 390 395 400

Gly Lys Val Asn Arg Pro Gly Ser Asp Tyr Lys Asp Asp Asp Asp Lys
 405 410 415

<210> 8

<211> 119

<212> PRT

<213> Mus musculus

<400> 8

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Lys Asp Thr
 20 25 30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
 50 55 60

Gln Gly Lys Ala Thr Ile Thr Gly Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ala
 115

<210> 9

<211> 119

<212> PRT

<213> Mus musculus

<400> 9

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala

1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Lys Asp Thr

20 25 30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile

35 40 45

Gly Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe

50 55 60

Gln Gly Lys Ala Thr Ile Thr Gly Asp Thr Ser Ser Asn Thr Ala Tyr

65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly

100 105 110

Thr Leu Val Thr Val Ser Ala

115

<210> 10

<211> 119

<212> PRT

<213> Mus musculus

<400> 10

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Arg Asp Thr
 20 25 30

Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Arg Ile Asp Leu Val Asn Val Asn Thr Lys Tyr Asp Pro Asn Phe
 50 55 60

Gln Asp Arg Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80

Leu Gln Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ala
 115

<210> 11

<211> 119

<212> PRT

<213> Mus musculus

<400> 11

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
 1 5 10 15

Leu Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Tyr
 20 25 30

Tyr Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile

35

40

45

Gly Arg Ile Asp Leu Glu Lys Gly Asn Ile Ile Tyr Asp Pro Lys Phe

50

55

60

Gln Gly Lys Asp Asn Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr

65

70

75

80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85

90

95

Ala Arg Gly Gly Tyr Asp Val Pro Ser Phe Ala Tyr Trp Gly Gln Gly

100

105

110

Thr Leu Val Thr Val Ser Ala

115

<210> 12

<211> 119

<212> PRT

<213> Mus musculus

<400> 12

Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly

1

5

10

15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr

20

25

30

Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile

35

40

45

Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu

50	55	60
Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Lys Thr Leu Tyr		
65	70	75 80
Leu Gln Met Asn Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys		
85	90	95
Ala Arg Phe Phe Tyr Tyr Gly Thr Pro Asp Tyr Trp Gly Gln Gly Thr		
100	105	110
Thr Leu Thr Val Ser Ser Ala		
115		

<210> 13
 <211> 119
 <212> PRT
 <213> Mus musculus

<400> 13

Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Lys Phe Ser Cys Glu Ala Ser Gly Phe Asp Phe Ser Arg Tyr
20 25 30
Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Thr Tyr Thr Ser Ser Leu
50 55 60
Lys Asp Arg Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr
65 70 75 80

Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95

Ala Arg Leu Phe Tyr Tyr Gly Thr Pro Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Thr Leu Thr Val Ser Ser Ala
115

<210> 14

$\langle 211 \rangle$ 120

<212> PRT

<213> Mus musculus

<400> 14

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Phe Gly Tyr Thr Phe Thr Thr Tyr
20 25 30

Pro Ile Glu Trp Met Lys Gln Asn His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Lys Phe His Pro Asp Asn Asp Asp Thr Asn Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Lys Leu Thr Val Glu Lys Ser Ser Ser Thr Val Tyr
65 70 75 80

Leu Glu Leu Ser Arg Leu Thr Ser Asp Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Gly His Asp Tyr Asp Tyr Gly Met Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Ser Val Thr Val Ser Ser Ala
 115 120

<210> 15

<211> 106

<212> PRT

<213> Mus musculus

<400> 15

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
 1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met
 20 25 30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Glu Leu Trp Ile Tyr
 35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
 50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
 65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr
 85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 16

<211> 106

<212> PRT

<213> Mus musculus

<400> 16

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Glu Leu Trp Ile Tyr
35 40 45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu
65 70 75 80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr
85 90 95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 17

<211> 106

<212> PRT

<213> Mus musculus

<400> 17

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met
20 25 30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr

35

40

45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser

50

55

60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu

65

70

75

80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr

85

90

95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys

100

105

<210> 18

<211> 106

<212> PRT

<213> Mus musculus

<400> 18

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly

1

5

10

15

Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met

20

25

30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr

35

40

45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser

50

55

60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu

65		70		75		80									
Asp	Ala	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Arg	Ser	Ser	Tyr	Pro	Phe	Thr
				85					90					95	

Phe	Gly	Ser	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100					105	

<210> 19
 <211> 108
 <212> PRT
 <213> Mus musculus

<400> 19
Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Ala Ser Val Gly
1 5 10 15

Asp	Arg	Val	Ser	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Asp	Val	Ile	Val	Ala
		20					25					30			

Val	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Glu	Leu	Leu	Ile
		35				40						45			

Tyr	Ser	Ala	Ser	Tyr	Arg	Tyr	Thr	Gly	Val	Pro	Asp	Arg	Phe	Thr	Gly
	50					55					60				

Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Phe	Thr	Ile	Ser	Ser	Val	Gln	Ala
65					70					75				80	

Glu	Asp	Leu	Ala	Val	Tyr	Tyr	Cys	Gln	Gln	His	Tyr	Ser	Ser	Pro	Pro
				85					90					95	

Trp	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys
			100				105				

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<400> 20

Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly
 1 5 10 15

Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Lys Ala
 20 25 30

Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45

Tyr Ser Thr Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala
 65 70 75 80

Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ser Ser Pro Pro
 85 90 95

Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 21
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 <213> Mus musculus

<400> 21

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly

1	5	10	15
Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp			
20	25	30	
Gly Asp Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro			
35	40	45	
Lys Leu Leu Ile Tyr Gly Ala Ser Asn Leu Glu Ser Gly Thr Pro Ala			
50	55	60	
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asp Ile His			
65	70	75	80
Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Ser Asn			
85	90	95	
Glu Asp Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Thr			
100	105	110	

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<400> 22
 Asp Thr Phe Met His
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<210> 23
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<400> 23

Asp Tyr Tyr Ile His

1 5

<210> 24

<211> 5

<212> PRT

<213> Mus musculus

<400> 24

Arg Tyr Trp Met Ser

1 5

<210> 25

<211> 5

<212> PRT

<213> Mus musculus

<400> 25

Thr Tyr Pro Ile Glu

1 5

<210> 26

<211> 17

<212> PRT

<213> Mus musculus

<400> 26

Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe Gln

1 5 10 15

Gly

<210> 27
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 <212> PRT
 <213> Mus musculus

<400> 27
 Arg Ile Asp Leu Val Asn Val Asn Thr Lys Tyr Asp Pro Asn Phe Gln
 1 5 10 15

Asp

<210> 28
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 <212> PRT
 <213> Mus musculus

<400> 28
 Arg Ile Asp Leu Glu Lys Gly Asn Ile Ile Tyr Asp Pro Lys Phe Gln
 1 5 10 15

Gly

<210> 29
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 <212> PRT
 <213> Mus musculus

<400> 29
 Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu Lys
 1 5 10 15

Asp

<210> 30

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<212> PRT

<213> Mus musculus

<400> 30

Glu Ile Asn Pro Asp Ser Ser Thr Ile Thr Tyr Thr Ser Ser Leu Lys

1

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10

15

Asp

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<212> PRT

<213> Mus musculus

<400> 31

Lys Phe His Pro Asp Asn Asp Asp Thr Asn Tyr Asn Glu Lys Phe Lys

1

5

10

15

Gly

<210> 32

<211> 10

<212> PRT

<213> Mus musculus

<400> 32

Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr

1 5 10

<210> 33

<211> 10

<212> PRT

<213> Mus musculus

<400> 33

Gly Gly Tyr Asp Val Pro Ser Phe Ala Tyr

1 5 10

<210> 34

<211> 9

<212> PRT

<213> Mus musculus

<400> 34

Phe Phe Tyr Tyr Gly Thr Pro Asp Tyr

1 5

<210> 35

<211> 9

<212> PRT

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<400> 35

Leu Phe Tyr Tyr Gly Thr Pro Asp Tyr

1 5

<210> 36

<211> 10
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<400> 36
Gly His Asp Tyr Asp Tyr Gly Met Asp Tyr
1 5 10

<210> 37
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<212> PRT
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<400> 37
Ser Ala Thr Ser Ser Leu Ile Tyr Met His
1 5 10

<210> 38
<211> 10
<212> PRT
<213> Mus musculus

<400> 38
Ser Ala Ser Ser Ser Val Ser Tyr Met His
1 5 10

<210> 39
<211> 11
<212> PRT
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<400> 39
Lys Ala Ser Gln Asp Val Ile Val Ala Val Ala

1 5 10

<210> 40

<211> 11

<212> PRT

<213> Mus musculus

<400> 40

Lys Ala Ser Gln Asp Val Ile Lys Ala Val Ala

1 5 10

<210> 41

<211> 15

<212> PRT

<213> Mus musculus

<400> 41

Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Tyr Leu Asn

1 5 10 15

<210> 42

<211> 11

<212> PRT

<213> Mus musculus

<400> 42

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala

1 5 10

<210> 43

<211> 11

<212> PRT

<213> Mus musculus

<400> 43

Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp

1 5 10

<210> 44

<211> 11

<212> PRT

<213> Mus musculus

<400> 44

Ser Thr Ser Tyr Arg Tyr Thr Gly Val Pro Asp

1 5 10

<210> 45

<211> 11

<212> PRT

<213> Mus musculus

<400> 45

Gly Ala Ser Asn Leu Glu Ser Gly Thr Pro Ala

1 5 10

<210> 46

<211> 7

<212> PRT

<213> Mus musculus

<400> 46

Arg Ser Ser Tyr Pro Phe Thr

1 5

<210> 47
<211> 8
<212> PRT
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<400> 47
His Tyr Ser Ser Pro Pro Trp Thr
1 5

<210> 48
<211> 7
<212> PRT
<213> Mus musculus

<400> 48
Ser Asn Glu Asp Pro Pro Thr
1 5

<210> 49
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<212> PRT
<213> Artificial

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<222> (2)..(2)
<223> "Xaa" in position 2 represents "Thr" or "Tyr"

<220>
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<222> (3)..(3)

<223> "Xaa" in position 3 represents "Phe" or "Tyr"

<220>

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<222> (4)..(4)

<223> "Xaa" in position 4 represents "Met" or "Ile"

<400> 49

Asp Xaa Xaa Xaa His

1

5

<210> 50

<211> 17

<212> PRT

<213> Artificial

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<222> (4)..(4)

<223> "Xaa" in position 4 represents "Tyr" or "Leu"

<220>

<221> misc_feature

<222> (5)..(5)

<223> "Xaa" in position 5 represents "Val" or "Glu"

<220>

<221> misc_feature

<222> (6)..(6)

<223> "Xaa" in position 6 represents "Asn" or "Lys"

<220>

<221> misc_feature

<222> (7).. (7)

<223> "Xaa" in position 7 represents "Gly" or "Val"

<220>

<221> misc_feature

<222> (9).. (9)

<223> "Xaa" in position 9 represents "Thr" or "Ile"

<220>

<221> misc_feature

<222> (10).. (10)

<223> "Xaa" in position 10 represents "Lys" or "Ile"

<220>

<221> misc_feature

<222> (14).. (14)

<223> "Xaa" in position 14 represents "Lys" or "Asn"

<220>

<221> misc_feature

<222> (17).. (17)

<223> "Xaa" in position 17 represents "Gly" or "Asp"

<400> 50

Arg Ile Asp Xaa Xaa Xaa Xaa Asn Xaa Xaa Tyr Asp Pro Xaa Phe Gln

1

5

10

15

Xaa

<210> 51

<211> 10

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR3

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<222> (6)..(6)

<223> "Xaa" in position 6 represents "Arg" or "Pro"

<220>

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<222> (7)..(7)

<223> "Xaa" in position 7 represents "Glu" or "Ser"

<400> 51

Gly Gly Tyr Asp Val Xaa Xaa Phe Ala Tyr

1 5 10

<210> 52

<211> 5

<212> PRT

<213> Artificial

<220>

<223> Heavy chain CDR1

<400> 52

Arg Tyr Trp Met Ser

1 5

<210> 53

<211> 17

<212> PRT

<213> Artificial

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<223> Heavy chain CDR2

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<222> (10)..(10)

<223> "Xaa" in position 10 represents "Asn" or "Thr"

<220>

<221> misc_feature

<222> (13)..(13)

<223> "Xaa" in position 13 represents "Pro" or "Ser"

<400> 53

Glu Ile Asn Pro Asp Ser Ser Thr Ile Xaa Tyr Thr Xaa Ser Leu Lys

1

5

10

15

Asp

<210> 54

<211> 9

<212> PRT

<213> Artificial

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<223> Heavy chain CDR3

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<221> misc_feature

<222> (1)..(1)

<223> "Xaa" in position 1 represents "Phe" or "Leu"

<400> 54

Xaa Phe Tyr Tyr Gly Thr Pro Asp Tyr

1

5

<210> 55

<211> 10

<212> PRT

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<222> (3)..(3)

<223> "Xaa" in position 3 represents "Thr" or "Ser"

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<221> misc_feature

<222> (6)..(6)

<223> "Xaa" in position 6 represents "Leu" or "Val"

<220>

<221> misc_feature

<222> (7)..(7)

<223> "Xaa" in position 7 represents "Ile" or "Ser"

<400> 55

Ser Ala Xaa Ser Ser Xaa Xaa Tyr Met His

1

5

10

<210> 56

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR2

<400> 56

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala

1 5 10

<210> 57

<211> 7

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR3

<400> 57

Arg Ser Ser Tyr Pro Phe Thr

1 5

<210> 58

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR1

<220>

<221> misc_feature

<222> (8).. (8)

<223> "Xaa" in position 8 represents "Val" or "Lys"

<400> 58

Lys Ala Ser Gln Asp Val Ile Xaa Ala Val Ala

1

5

10

<210> 59

<211> 11

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR2

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<222> (2).. (2)

<223> "Xaa" in position 2 represents "Ala" or "Thr"

<400> 59

Ser Xaa Ser Tyr Arg Tyr Thr Gly Val Pro Asp

1

5

10

<210> 60

<211> 8

<212> PRT

<213> Artificial

<220>

<223> Light chain CDR3

<400> 60

His Tyr Ser Ser Pro Pro Trp Thr

1

5